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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/875,204	06/05/2001	Herbert Heyneker	IVGN 305.1 CON	6403

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EXAMINER

LUDLOW, JAN M

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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/875,204	Applicant(s) HEYNEKER ET AL.	
	Examiner Jan M. Ludlow	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 64-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 64-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 64-74 are rejected under 35 U.S.C. 103(a) as being obvious over Harris et al (USP 4,871,683) in view of Raysberg et al (USP 5,106,583) and Brennan (US 5,472,672).

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Harris et al disclose a reaction system substantially as claimed. The system comprises a carousel 12 with a plurality of reaction mounts 20 holding solid support (filter 22 or other supports (col. 4, line 26)) in well 58 arranged on the radius of the carousel, a rotator 74, 76 that rotates the carousel step-wise around the axis, a fluid delivery system 100 that delivers liquid to the reaction well, a drain system 112, 114 that drains the liquid by differential pressure from the well, optical analyzer (col. 6, lines 50-65), temperature control (col. 7, lines 25-30), and a programmable digital computer that controls the system 162 (columns 3-7, Figs 1, 4-5). The through hole 60 in the carousel which holds the reaction mount 20 constitutes the instant conduit and the portion below support 22 constitutes the chamber. In Figures 2 there is a collection volume (instant chamber) having ribs 44, 46 in it in element 18 below the reaction mount 20, which volume is also within the carousel as shown in Figures 4, 5. Alternatively, the insertion of part 18 into the carousel "forms" the claimed conduit and chamber in the carousel. Outlet 40 protrudes from the carousel as claimed. A plurality of drain lines connected to drain receptacles 112, 149 as claimed are shown in figures 4-5, col. 6, lines 19-68. Differential pressure is by e.g., air pressure from pump 118, 148 or gravity.

Harris fails to teach plural wells per mount with a common drain or radially moveable dispense heads or movement of the drain receptacles.

Raysberg et al teach a carousel 19 with a plurality of reaction mounts with reaction wells 3 arranged on the radius of the carousel, a rotator that rotates the carousel step-wise around the axis (column 4, lines 32-41), a fluid delivery system 33 that delivers liquid to the reaction wells, a drain system 35 that drains the liquid by

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differential pressure from the wells, a programmable digital computer that controls the system 153 (columns 3-7, Figs 1, 4-5). The fluid delivery system is moveable radially as shown at arrow 113 of Figure 1d, and into and out of engagement with the mount (col. 2, lines 40-50).

Brennan teaches a device for processing samples in filter wells 26 in communication with common drain chamber 81. Brennan further teaches nucleic acids attached to solid supports such as controlled pore glass and acetonitrile in the wells. Nucleic acids of various chain lengths are synthesized.

It would have been obvious to provide plural reaction wells in a sample mount of Harris as taught by Raysberg in order to increase carousel capacity. It would have been obvious to make the dispenser of Harris moveable up and down and radially moveable as taught by Raysberg in order to access the mounts and/or remove the dispenser from the carousel as shown by Raysberg. It would have been obvious to move the drain 112 of Harris with respect to the carousel in order to use vacuum instead of or in addition to pressure to drain the mounts as taught by Raysberg. It would have been obvious to provide the wells in communication with a common drain chamber in order to simultaneously remove fluid from the wells as taught by Brennan. With respect to 16 wells, in that the prior art teaches a plurality of wells, it is not seen as a patentable distinction to select a particular number of wells in order to process as many samples on the carousel as possible. It would have further been obvious to provide nucleic acids of varying lengths on solid supports (including the well known

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polymer supports, such as polystyrene or cellulose or nitrocellulose) and acetonitrile in the wells in order to use wells to synthesize nucleic acids as taught by Brennan.

5. Claims 64, 70-73 are rejected under 35 U.S.C. 103(a) as being obvious over Feygin et al US006890491 in view of Raysberg (USP 5,106,583) and Brennan (US 5,472,672).

Feygin teaches carousel 64 with conduits 22 forming a cavity beneath reaction mounts 10 having drainage holes 15. Exit ports 29 on the carousel communicate with engagement ports 28 for drainage. Plural dispensing stations 32 communicate with the reaction mounts via tube 66. Temperature controller 70 is provided. An optical sensor may be provided to monitor whether an appropriate vessel for synthesis is present (meeting the broad limitation of "adapted to analyze ... synthesis").

Feygin fails to teach plural wells per mount with a common drain chamber or radially moveable dispense heads or raising/lowering of the drains.

Raysberg et al teach a carousel 19 with a plurality of reaction mounts with reaction wells 3 arranged on the radius of the carousel, a rotator that rotates the carousel step-wise around the axis (column 4, lines 32-41), a fluid delivery system 33 that delivers liquid to the reaction wells, a drain system 35 that drains the liquid by differential pressure from the wells, a programmable digital computer that controls the system 153 (columns 3-7, Figs 1, 4-5). The fluid delivery system is moveable radially as shown at arrow 113 of Figure 1d, and into and out of engagement with the mount (col. 2, lines 40-50).

Brennan teaches a device for processing samples in filter wells 26 in communication with common drain chamber 81. Brennan further teaches nucleic acids attached to solid supports such as controlled pore glass and acetonitrile in the wells. Nucleic acids of various chain lengths are synthesized.

It would have been obvious to provide plural reaction wells in a sample mount of Feygin as taught by Raysberg in order to increase carousel capacity. It would have been obvious to make the dispenser of Feygin moveable up and down and radially moveable as taught by Raysberg in order to access the mounts and/or remove the dispenser from the carousel as shown by Raysberg. It would have been obvious to raise/lower the drains of Feygin with respect to the carousel in order to use couple the vacuum to drain the mounts as taught by Raysberg.

It would have been obvious to provide the wells in communication with a common drain chamber in order to simultaneously remove fluid from the wells as taught by Brennan. With respect to 16 wells, in that the prior art teaches a plurality of wells, it is not seen as a patentable distinction to select a particular number of wells in order to process as many samples on the carousel as possible. It would have further been obvious to provide nucleic acids of varying lengths on solid supports (including the well known polymer supports, such as polystyrene or cellulose or nitrocellulose) and acetonitrile in the wells in order to use wells to synthesize nucleic acids as taught by Brennan.

6. Applicant's arguments filed July 25, 2007 have been fully considered but they are not persuasive.

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7. Applicant argues that none of the references teaches 16 wells, but in that the prior art teaches a row of a plurality of wells, and one of ordinary skill, using common sense and a knowledge of multiplication, would have understood that providing more wells on the carousel permits treatment of more samples, thus where three wells are shown, it would have been obvious to provide more than three wells, such as five wells or ten wells, or even sixteen wells in order to fit more samples on the carousel and process more samples in a single experiment.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-

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1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow
Primary Examiner
Art Unit 1743

Jml

October 1, 2007